August 29, 2001

Mr. Jerry Miller
Miller's Wood-N-Things, Inc.
11894 Country Road 14
Middlebury, Indiana 46540

Re: Registered Operation Status,
039-13722-00433

Dear Mr. Miller:

The renewal application from Miller's Wood-N-Things, Inc. received on December 28, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following woodworking shop located at 11894 Country Road 14, Middlebury, Indiana, 46540 is still classified as registered:

(a) One (1) paint spray booth equipped with one (1) airless spray gun, using dry filters to control the PM emissions, capable of painting wooden furniture at a rate of 4 units per hour;

(b) One (1) woodworking shop equipped with woodworking equipments, using baghouses and a cyclone to control the PM emissions, capable of process wood at a rate of 236 pounds per hour;

(c) Four (4) small natural gas fired heat units, with a total heat input capacity of 1.1 MMBtu/hr; and

(d) Two (2) small wood stoves with a heat input capacity of 0.18 MMBtu/hr each.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

    (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

    (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

2. Pursuant to 326 IAC 2-6 (Emission Reporting), this source is subject to 326 IAC 2-6, because it has the potential to emit more than ten tons per year of PM and VOC. Pursuant to this rule, the owner/operator or the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

3. Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating) the surface coating applied

to wood furniture and cabinets shall utilize one of the following application methods:

Airless Spray Application
Air Assisted Airless Spray Application
Electrostatic Spray Application
Electrostatic Bell or Disc Application
Heated Airless Spray Application
Roller Coating
Brush or Wipe Application
Dip-and-Drain Application

High Volume Low Pressure (HVLP) Spray Application is an accepted alternative method of application for Air Assisted Airless Spray Application. HVLP spray is the technology used to apply coating to substrate by means of coating application equipment which operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

4. Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter (PM) from the woodworking and surface coating operations shall be limited to 0.98 pounds per hour.

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The baghouses shall be in operation at all times the woodworking facility is in operation, in order to comply with this limit.

This registration is a renewal issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3)). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,
Original signed by

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ERG/RB

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance - Greg Wingstrom
Northern Regional Office
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration
Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	Miller's Wood-N-Things, Inc.
Address:	11894 Country Road 14
City:	Middlebury, Indiana 46546
Authorized individual:	Jerry Miller
Phone #:	(219) 825-7967
Registration #:	039-13722-00433

I hereby certify that Miller's Wood-N-Things is still in operation and is in compliance with the requirements of Registration 039-13722-00433.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration Renewal

Source Background and Description

Source Name:	Miller Wood-N-Things, Inc.
Source Location:	11894 Country Road 14, Middlebury, Indiana 46540
County:	Elkhart
Operation Permit No.:	039-13722-00433
Permit Reviewer:	ERG/RB

The Office of Air Quality (OAQ) has reviewed an application from Miller's Wood-N-Things, Inc. relating to the construction and operation of an woodworking facility.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) paint spray booth equipped with one (1) airless spray gun, using dry filters to control the PM emissions, capable of painting wooden furniture at a rate of 4 units per hour;

(b) One (1) woodworking shop equipped with woodworking equipments, using baghouses and a cyclone to control the PM emissions, capable of process wood at a rate of 236 pounds per hour;

(c) Four (4) small natural gas fired heat units, with a total heat input capacity of 1.1 MMBtu/hr; and

(d) Two (2) small wood stoves with a heat input capacity of 0.18 MMBtu/hr each.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

There are no new construction activities included in this permit.

Existing Approvals

The source has been operating under a previous approval including, but not limited to, the following:

(a) Registration 039-7278-00433, issued on January 30, 1997

All conditions from the previous approval were incorporated into this permit.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Briefly indicate which process/equipment emissions belong to each stack	Height (feet above ground)	Diameter (feet inside)	Gas Flow Rate (acfm)	Gas Discharge Temperature (^{0}F)
H1	Wood heater	15	0.67	500	220
H2	Wood heater	20	0.67	500	220
H3, H4	N.G. space heater	15	0.67	500	250
P1	Woodworking/baghouse w/ cyclone	25	1.0	6,100	Ambient
P2	Woodworking/baghouse w/ cyclone	5 (inside)	0.5	1,500	Ambient
V1	Paint booth	15	2.0 x 2.0 (pointing down)	2,500	Ambient

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 28, 2000, with additional information received on April 23, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (7 pages).

Potential To Emit Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	14.2
PM-10	3.5
SO_2	0.01
VOC	12.3
CO	1.4
NO_x	0.4
Single HAP (Toluene)	4.2
Total HAPs	5.6

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are greater than levels listed in 326 IAC 2-1.1-3(d)(1), therefore the source is subject to the provisions of 326 IAC 2-5.5.1.

(d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(e) This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Maintenance
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Elkhart County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,

(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) This woodworking operation is not subject to the requirements of the National Emission

Standards for Hazardous Air Pollutants (NESHAPs), Subpart JJ because the source does not meet the definition of a major source as defined in 40 CFR 63 Subpart A.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten tons per year of PM and VOC. Pursuant to this rule, the owner/operator or the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the woodworking facility will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 8-1-6 (New Facilities - General Reduction Requirement)

This source does not have potential VOC emissions equal to or greater than twenty five (25) tons per year, and is subject to 326 IAC 8-2-12, therefore this source is not subject to the provisions of 326 IAC 8-1-6.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the woodworking and surface coating operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

$$E = 4.10 \left(\frac{236 \text{ lbs/hr}}{2000 \text{ lbs/tons}} \right)^{0.67} = 4.10\ (0.118)^{0.67} = 4.10\ (0.239) = 0.98 \text{lb/hr}$$

The baghouses shall be in operation at all times the woodworking shop is in operation, in order to comply with this limit.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

The surface coating applied to wood furniture and cabinets shall utilize one of the following application methods:

Airless Spray Application
Air Assisted Airless Spray Application
Electrostatic Spray Application
Electrostatic Bell or Disc Application
Heated Airless Spray Application
Roller Coating
Brush or Wipe Application
Dip-and-Drain Application

High Volume Low Pressure (HVLP) Spray Application is an accepted alternative method of application for Air Assisted Airless Spray Application. HVLP spray is the technology used to apply coating to substrate by means of coating application equipment which operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

Conclusion

The operation of this woodworking shop shall be subject to the conditions of the attached Registration 039-13722-00433.

Appendix A: Emissions Calculations
External Combustion Boiler - Commercial/Institutional
Wood Waste Combustion (wood-fired boiler, uncontrolled)

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP: **039-13722**
Plt ID: **039-00433**
Reviewer: ERG/KH
Date: 03/19/2001

Heat Input Capacity MMBtu/hr	Heating Value BTU/lb	Capacity tons/hr
0.36	9000.00	0.02

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/ton	8.8	8.8	0.1	1.5	0.2	13.6
Potential Emission in tons/yr	0.77	0.77	0.01	0.13	0.02	1.19

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu

Potential Capacity (tons/hr) = Heat Input Capacity (MMBtu/hr) x 1,000,000 BTU/MMBTU / 9000 BTU/lb / 2000 lb/ton
Emission Factors are from AP 42, Chapter 1.6, Tables 1.6-1, 1.6-2, and 1.6-3.
Emission (tons/yr) = Capacity (tons/hr) x Emission Factor (lb/ton) x 8760 hrs/yr /2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP: **039-13722**
Plt ID: **039-00433**
Reviewer: ERG/KH
Date: 03/19/2001

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.5	4.4

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.017	0.017	0.001	0.219	0.012	0.184

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).
See page 3 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP: **039-13722**
Plt ID: **039-00433**
Reviewer: ERG/KH
Date: 03/19/2001

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	4.599E-06	2.628E-06	1.643E-04	3.942E-03	7.446E-06

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.095E-06	2.409E-06	3.066E-06	8.322E-07	4.599E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Woodworking

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP: **039-13722**
Plt ID: **039-00433**
Reviewer: ERG/KH
Date: 03/19/2001

Woodworking Emissions:

Actual Throughput of Wood (lbs/hr):	140.53
Maximum Throughput of Wood (lbs/hr):	260
Amount of Sawdust Collected (lbs/hr)	15
Amount of PM collected (lb/hr) (assuming 18% of sawdust is PM)	2.7
Control efficiency	99%
Amount of PM emitted (lbs/hr)	0.03
Potential to Emit PM (tpy)	**11.83**
Controlled PM emissions (tpy)	**0.12**
Potential to Emit PM10 (tpy) (assuming 10% of PM is PM10)	**1.18**
Controlled PM10 emissions (TPY)	**0.01**

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP: **039-13722**
Plt ID: **039-00433**
Reviewer: ERG/KH
Date: 03/19/2001

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
wood glue	9.2	54.10%	53.2%	0.9%	58.5%	41.12%	8.00E-07	80308.000	0.19	0.08	0.01	0.12	0.02	0.00	0.20	100%
stain	7.2	98.79%	0.9%	97.9%	0.8%	0.68%	0.00176	36.540	7.06	7.01	0.45	10.83	1.98	0.02	1030.93	30%
sealer	7.5	82.60%	0.0%	82.6%	0.0%	13.14%	0.00479	36.540	6.20	6.20	1.08	26.02	4.75	0.60	47.15	40%
topcoat	7.7	73.70%	0.0%	73.7%	0.0%	17.81%	0.00470	36.540	5.67	5.67	0.98	23.41	4.27	0.91	31.86	40%
pure lacquer thinner	7.0	100.00%	0.2%	99.8%	0.2%	99.83%	0.00108	36.540	7.01	7.00	0.28	6.61	1.21	0.00	7.01	100%
ate Potential Emissions			**Add worst case coating to all solvents**								**2.79**	**67.00**	**12.23**	**1.53**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: **Miller's Wood-N-Things, Inc**
Address City IN Zip: **11894 County Road 14, Middlebury, IN 46540**
CP#: **039-13722**
Plt ID: **039-00433**
Permit Reviewer: ERG/KH
Date: 03/19/2001

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methyl Isobutyl Ketone	Weight % Methyl Ethyl Ketone	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methyl Isobutyl Ketone Emissions (ton/yr)	Methyl Ethyl Ketone Emissions (ton/yr)	Methanol Emissions (ton/yr)
wood glue	9.16	8.00E-07	80308.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00
stain	7.16	0.00176	36.540	50.11%	0.00%	0.00%	0.00%	5.74%	1.01	0.00	0.00	0.00	0.12
sealer	7.5	0.00479	36.540	0.00%	40.00%	0.00%	0.00%	0.00%	0.00	2.30	0.00	0.00	0.00
topcoat	7.7	0.00470	36.540	0.00%	20.00%	0.00%	0.00%	0.00%	0.00	1.16	0.00	0.00	0.00
pure lacquer thinner	7.01	0.00108	36.540	0.00%	60.00%	10.00%	10.00%	0.00%	0.00	0.73	0.12	0.12	0.00
Speciated HAP Potential Emissions									**1.01**	**4.18**	**0.12**	**0.12**	**0.12**

Total HAP Potential Emissions (tpy): **5.6**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs